**SECTION II. (AMENDMENTS TO THE CLAIMS)**

A listing of claims 1-60 of the present application, as amended/added herein with markings showing changes made, is provided below:

1-28. (Cancelled).

29. (Currently amended) A layered structure comprising:

a substrate having an upper surface of single crystalline Si, and

a layer of single crystalline SiC over said upper surface,

said single crystalline SiC layer and said upper surface of single crystalline Si define an interface having an abrupt change in C concentration of more than 1 x $10^{18}$ atoms/cc over a layer thickness in the range from about 6 Å to about 60 Å,

and wherein the oxygen in said SiC layer is less than 1 x $10^{17}$ atoms/cc.

30-31. (Canceled).

32. (Currently amended) The layered structure of claim 29 further including a layer of Si over said layer of single crystalline SiC, said single crystalline SiC layer and said Si layer define an interface having an abrupt change in C concentration above 1 x $10^{18}$ atoms/cc over a layer thickness in the range from about 6 Å to about 60 Å and wherein the oxygen in said Si layer is less than 1 x $10^{17}$ atoms/cc.

33. (Currently amended) ~~The~~ A layered structure ~~of claim 29~~ comprising:

a substrate having an upper surface of single crystalline Si, and

a layer of SiC over said upper surface,

said SiC layer and said upper surface of single crystalline Si define an interface having an abrupt change in C concentration of more than 1 x $10^{18}$ atoms/cc over a layer thickness in the range from about 6 Å to about 60 Å, wherein the oxygen in said SiC

layer is less than 1 x $10^{17}$ atoms/cc, wherein said layer of SiC includes a p-type dopant in the range from about 1 x $10^{18}$ to about 1 x $10^{21}$ atoms/cc and wherein said SiC layer with said p-type dopant can withstand furnace anneals to temperatures of 850° C and rapid thermal anneal temperatures to 1000° C.

34. (Currently amended) ~~The~~ A layered structure ~~of claim 29~~ comprising:

a substrate having an upper surface of single crystalline Si, and

a layer of SiC over said upper surface,

said SiC layer and said upper surface of single crystalline Si define an interface having an abrupt change in C concentration of more than 1 x $10^{18}$ atoms/cc over a layer thickness in the range from about 6 Å to about 60 Å, wherein the oxygen in said SiC layer is less than 1 x $10^{17}$ atoms/cc, wherein said layer of SiC includes a n-type dopant in the range from about 1 x $10^{18}$ to about 1 x $10^{21}$ atoms/cc.

35. (Previously presented) The layered structure of claim 33 further including a layer of Si over said layer of p-type doped SiC, said p-type doped SiC layer and said Si layer define an interface having an abrupt change in C concentration above 1 x $10^{18}$ atoms/cc over a layer thickness in the range from about 6 A to about 60 A and wherein the oxygen in said Si layer is less than 1 x $10^{17}$ atoms/cc.

36. (Previously presented) The layered structure of claim 35 wherein said interface defined by said p-type doped SiC layer and said Si layer has an abrupt change in dopant concentration above 1 x $10^{18}$ atoms/cc over a layer thickness in the range from about 6 Å to about 60 Å.

37. (Previously presented) The layered structure of claim 34 further including a layer of Si over said layer of n-type doped SiC, said n-type doped SiC layer and said Si layer define an interface having an abrupt change in C concentration above 1 x $10^{18}$ atoms/cc over a

layer thickness in the range from about 6 Å to about 60 Å and wherein the oxygen in said Si layer is less than 1 x $10^{17}$ atoms/cc.

38. (Previously presented) The layered structure of claim 37 wherein said interface defined by said n-type doped SiC layer and said Si layer has an abrupt change in dopant concentration above 1 x $10^{18}$ atoms/cc over a layer thickness in the range from about 6 Å to about 60 Å.

39. (Previously presented) The layered structure of claim 29 further including a layer of SiGe over said layer of SiC, said SiC layer and said SiGe layer define an interface having an abrupt change in C concentration above 1 x $10^{18}$ atoms/cc over a layer thickness in the range from about 6 A to about 60 A and wherein the oxygen in said SiGe layer is less than 1 x $10^{17}$ atoms/cc.

40. (Previously presented) The layered structure of claim 33 further including a layer of SiGe over said layer of p-type doped SiC, said p-type doped SiC layer and said SiGe layer define an interface having an abrupt change in C concentration above 1 x $10^{18}$ atoms/cc over a layer thickness in the range from about 6 A to about 60 A and wherein the oxygen in said SiGe layer is less than 1 x $10^{17}$ atoms/cc.

41. (Previously presented) The layered structure of claim 34 further including a layer of SiGe over said layer of n-type doped SiC, said n-type doped SiC layer and said SiGe layer define an interface having an abrupt change in C concentration above 1 x $10^{18}$ atoms/cc over a layer thickness in the range from about 6 A to about 60 A and wherein the oxygen in said SiGe layer is less than 1 x $10^{17}$ atoms/cc.

42. (Withdrawn) A layered structure comprising:

a substrate having an upper surface of single crystalline Si, and

a layer of SiGeC over said upper surface,

said SiGeC layer and said upper surface of single crystalline Si define an interface having an abrupt change in C concentration above 1 x $10^{18}$ atoms/cc over a layer thickness in the range from about 6 A to about 60 A,

and wherein the oxygen in said SiGeC layer is less than 1 x $10^{17}$ atoms/cc.

43. (Withdrawn) The layered structure of claim 42 wherein said SiGeC layer is single crystalline.

44. (Withdrawn) The layered structure of claim 42 wherein said SiGeC layer is polycrystalline.

45. (Withdrawn) The layered structure of claim 42 further including a layer of Si over said layer of SiGeC, said SiGeC layer and said Si layer define an interface having an abrupt change in C concentration above 1 x $10^{18}$ atoms/cc over a layer thickness in the range from about 6 A to about 60 A and wherein the oxygen in said Si layer is less than 1 x $10^{17}$ atoms/cc.

46. (Withdrawn) The layered structure of claim 42 wherein said layer of SiGeC includes a p-type dopant in the range from about 1 x $10^{18}$ to about 1 x $10^{21}$ atoms/cc and wherein said SiGeC layer with said p-type dopant can withstand furnace anneals to temperatures of 850° C and rapid thermal anneal temperatures to 1000° C.

47. (Withdrawn) The layered structure of claim 42 wherein said layer of SiGeC includes a n-type dopant in the range from about 1 x $10^{18}$ to about 1 x $10^{21}$ atoms/cc.

48. (Withdrawn) The layered structure of claim 46 further including a layer of Si over said layer of p-type doped SiGeC, said p-type doped SiGeC layer and said Si layer define an interface having an abrupt change in C concentration above 1 x $10^{18}$ atoms/cc over a layer thickness in the range from about 6 A to about 60 A and wherein the oxygen in said Si layer is less than 1 x $10^{17}$ atoms/cc.

49. (Withdrawn) The layered structure of claim 48 wherein said interface defined by said p-type doped SiGeC layer and said Si layer has an abrupt change in dopant concentration above 1 x $10^{18}$ atoms/cc over a layer thickness in the range from about 6 A to about 60 A.

50. (Withdrawn) The layered structure of claim 47 further including a layer of Si over said layer of n-type doped SiGeC, said n-type doped SiGeC layer and said Si layer define an interface having an abrupt change in C concentration above 1 x $10^{18}$ atoms/cc over a layer thickness in the range from about 6 A to about 60 A and wherein the oxygen in said Si layer is less than 1 x $10^{17}$ atoms/cc.

51. (Withdrawn) The layered structure of claim 50 wherein said interface defined by said n-type doped SiGeC layer and said Si layer has an abrupt change in dopant concentration above 1 x $10^{18}$ atoms/cc over a layer thickness in the range from about 6 A to about 60 A.

52. (Withdrawn) The layered structure of claim 42 further including a layer of SiGe over said layer of SiGeC, said SiGeC layer and said SiGe layer define an interface having an abrupt change in C concentration above 1 x $10^{18}$ atoms/cc over a layer thickness in the range from about 6 A to about 60 A and wherein the oxygen in said SiGe layer is less than 1 x $10^{17}$ atoms/cc.

53. (Withdrawn) The layered structure of claim 46 further including a layer of SiGe over said layer of p-type doped SiGeC, said p-type doped SiGeC layer and said SiGe layer define an interface having an abrupt change in C concentration above 1 x $10^{18}$ atoms/cc over a layer thickness in the range from about 6 A to about 60 A and wherein the oxygen in said SiGe layer is less than 1 x $10^{17}$ atoms/cc.

54. (Withdrawn) The layered structure of claim 47 further including a layer of SiGe over said layer of n-type doped SiGeC, said n-type doped SiGeC layer and said SiGe layer define an interface having an abrupt change in C concentration above 1 x $10^{18}$ atoms/cc over a layer thickness in the range from about 6 A to about 60 A and wherein the oxygen in said SiGe layer is less than 1 x $10^{17}$ atoms/cc.

55. (Withdrawn) A layered structure comprising:

a substrate having an upper surface of single crystalline Si, and

a multitude of layers of materials selected from the group consisting of Si, SiGe, SiC, and SiGeC over said upper surface, wherein said multitude of layers comprise at least one layer of SiC or SiGeC,

said multitude of layers and said upper surface of single crystalline Si define one or more interfaces having an abrupt change in C concentration above 1 x $10^{18}$ atoms/cc over a layer thickness in the range from about 6 A to about 60 A,

and wherein the oxygen in any carbon containing layer among said multitude of layers is less than 1 x $10^{17}$ atoms/cc.

56. (Withdrawn) The layered structure of claim 55 wherein said multitude of layers are single crystalline.

57. (Withdrawn) The layered structure of claim 55 wherein said multitude of layers are polycrystalline.

58. (Withdrawn) The layered structure of claim 55 wherein said carbon containing layer includes a p-type dopant in the range from about 1 x $10^{18}$ to about 1 x $10^{21}$ atoms/cc and wherein said carbon containing layer with said p-type dopant can withstand furnace anneals to temperatures of 850° C and rapid thermal anneal temperatures to 1000° C.

59. (Withdrawn) The layered structure of claim 55 wherein said carbon containing layer includes a n-type dopant in the range from about 1 x $10^{18}$ to about 1 x $10^{21}$ atoms/cc.

60. (Currently amended) A layered structure comprising:

a substrate having an upper surface of single crystalline Si,

one or more layers of single crystalline materials selected from the group consisting of single crystalline Si, SiGe, SiC, and SiGeC over said upper surface, wherein said one or more single crystalline material layers comprise at least one layer of single crystalline SiC or single crystalline SiGeC, and

said one or more single crystalline material layers and said upper surface of single crystalline Si define one or more interfaces having an abrupt change in C concentration of more than $1 \times 10^{18}$ atoms/cc over a layer thickness in the range from about 6 Å to about 60 Å,

and wherein the oxygen in any carbon-containing single crystalline material layer among said one or more single crystalline material layers is less than $1 \times 10^{17}$ atoms/cc.